THE ECOLOGY OF A TEMPORARY AND A PERMANENT POND IN TASMANIA.

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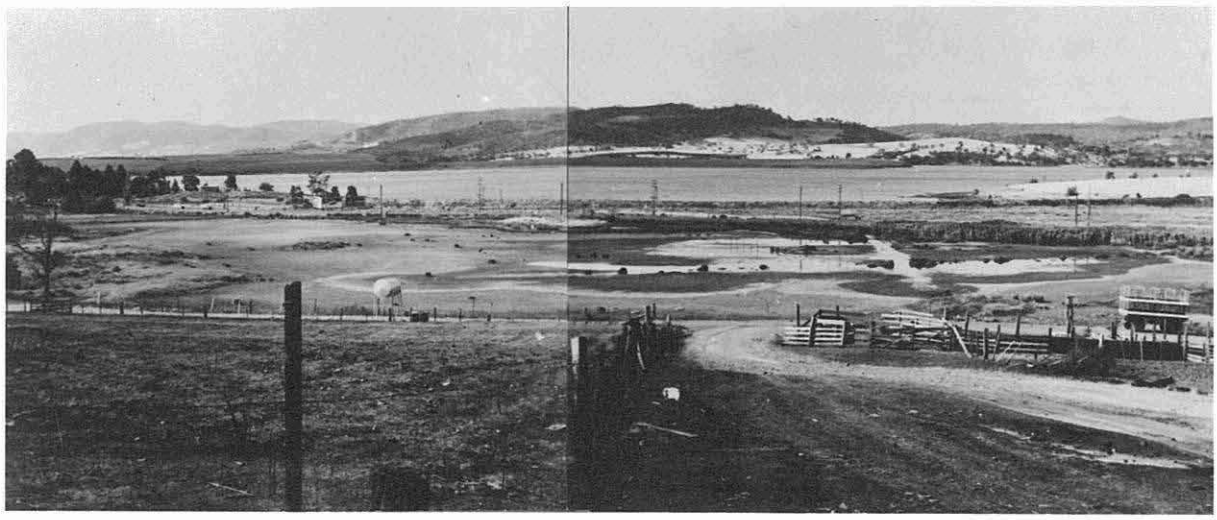

Plate 1. Granton Lagoon, March 1967, viewed from the south. The lagoon which is largely in a dry state is in the foreground, followed by the River Derwent, and the hills in the background.

Plate 2. Granton Lagoon, September 1967. The lagoon is completely under water.

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Contents.

I Summary

Two ponds, a temporary and a permanent, were investigated over a period of 7 months, the study of the temporary pond being the more detailed. Of the five physiochemical factors studied, it is improbable that any one factor caused all the observed biological changes, yet it seems that the incidence, abundance and succession of organisms followed temperature and depth of water more closely than any other factors. Laboratory studies were conducted to determine oversummering forms in dry soil. Ephippia, an oversummering form of Daphnia carinata, was quite resistant to desiccation. Factors affecting the hatching of ephippia were also examined. Daphnia itself was tolerant to a wide range of osmotic pressure. These observations showed the capacity of an organism well adapted to the rigors of the environment.

The permanent pond was studied only qualitatively. Its flora and fauna, especially the former, were less diverse than that of the temporary pond. This was probably due to high interspecific competition in the permanent pond where the organisms appeared to be persistent unlike the seasonal incidence, abundance and succession of organisms in the temporary pond which would reduce interspecific competition.

The growth rate of a calanoid and a amphipod were

greater in the temporary pond than in the permanent pond. This could have been due to differences in trophic conditions, predation and genetic differences.